GARMIN®

Fishfinder 160C®

color sonar

owner's manual

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INTRODUCTION

Thank you for choosing the Garmin® Fishfinder 160C. The Fishfinder 160C is a color sonar that offers many features, including the following:

- Ultrascroll™, which gives you a much faster update rate on your Sonar Pages.
- Auto Gain, which allows you to see more fish and structures.
- Whiteline, which helps you to interpret bottom hardness.
- 2x and 4x manual zoom.
- Adjustable keel offset.
- Alarms for shallow water, deep water, low battery, and suspended target detection.
- NMEA sonar data output.

About This Manual

This manual covers the installation and operation of the Fishfinder 160C. To get the most out of your new Fishfinder, take time to read this manual and learn the operating procedures for your unit in detail.

The **Introduction** contains information about this manual and the Table of Contents.

The **Getting Started** section contains general information about your Fishfinder and sonar.

The **Installation Instructions** contain the information needed to properly install and care for the Fishfinder 160C.

The **Operating Instructions** contain information about the operation of the Fishfinder 160C.

The **Appendix** contains information such as specifications, license requirements and warranty information.

The **Index** helps you find information quickly.

TABLE OF CONTENTS

Product Registration

Help us better support you by completing our online registration today! Connect to our Web site at www.garmin.com/registration/.

Use this area to record the serial number (8-digit number located on the back of the Fishfinder 160C) in case your Fishfinder 160C needs service. Keep the original sales receipt, or a photocopy, in a safe place.

Serial Number: ___ ___ ___ ___ ___ ___ ___ ___

Contact Garmin

Contact Garmin if you have any questions while using your Fishfinder 160C. In the USA contact Garmin Product Support by phone: (913) 397-8200 or (800) 800-1020, Monday–Friday, 8 AM–5 PM Central Time; or go to www.garmin.com/support/, and click **Product Support**.

In Europe, contact Garmin (Europe) Ltd. at +44 (0) 870.8501241 (outside the UK) or 0808 2380000 (within the UK).

Tell Us What You Think

Tell us how you like this manual! Fill out the Product Documentation Survey. Go to www.garmin.com/contactUs/, and click **Product Documentation Survey**.

Caring for the Fishfinder 160C

The Fishfinder 160C's case is constructed of high-quality materials and does not require user maintenance except cleaning.

Caring for the Screen

The Fishfinder 160C's lens is coated with a special anti-reflective coating that is sensitive to skin oils, waxes and abbrasive cleaners. Cleaners containing amonia, alcohol, abrasives, or anti-grease detergents will harm the anti-reflective coating. It is important to clean the lens using an eyeglass lens cleaner (that is specified as safe for anti-reflective coatings) and a clean, lint-free cloth.

Cleaning the Case

Clean the unit's outer casing (except for the screen) using a cloth dampened with a mild detergent solution, and then wipe dry. Avoid chemical cleaners and solvents that may damage plastic components.

Water Immersion

The Fishfinder 160C is waterproof to IEC Standard 60529 IPX7. It can withstand immersion in 1 meter of water for 30 minutes. Prolonged submersion can cause damage to the unit. After submersion, be certain to wipe and air dry the unit before reuse.

Storage

Do not store the Fishfinder 160C where prolonged exposure to temperature extremes may occur (such as in the trunk of a car) because permanent damage may result.

⚠ Warnings

WARNING: This product, its packaging, and its components contain chemicals known to the State of California to cause cancer, birth defects, or reproductive harm. This Notice is being provided in accordance with California's Proposition 65. If you have any questions or would like additional information, please refer to our Web site at http://www.garmin.com/prop65.

(Hg) - LAMPS INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE, OR FEDERAL LAWS.

For more information go to:
www.garmin.com/aboutGarmin/environment/disposal.jsp.

Important Information

The California Electronic Waste Recycling Act of 2003 requires the recycling of certain electronics. For more information on the applicability to this product, see www.erecycle.org.

<div align="center">GETTING STARTED</div>

Understanding the Fishfinder and Sonar

The Fishfinder 160C is a fully automatic, color sonar unit that allows you to go out on the water and find fish without having to configure a lot of settings. However, you can customize each setting as you prefer.

If you have used a Fishfinder before, you might already know how to interpret the sonar information on the screen, so you can skip this section. If you have not used a Fishfinder before, you might want to learn a bit about sonar: what it is, how it works, and what you might see on the Fishfinder 160C screen. This manual provides a general understanding of those things that you need to know about sonar that can help you interpret the screen and find the fish.

Understanding Sonar

During installation, you connect your Fishfinder 160C to a transducer. The transducer uses sound to determine information about what is in the water beneath your boat. Then the transducer sends the information to your Fishfinder to be shown on the screen for you to view and interpret.

The transducer sends sound waves down into the water in a cone shape, similar to a flashlight beam (covering a smaller circular area at the top and angling out to a larger circular area at the bottom).

These sound waves reflect off of any object that they hit, and then the waves travel back up to the transducer. These objects could be fish, branches, the bottom, or any other object that has density that is different from the water. The transducer receives the sound wave information, and then sends the information to the Fishfinder. The Fishfinder shows the information on the screen for you to see and interpret. The type of transducer and settings that you choose determine how the information appears on the screen.

Understanding the Fishfinder Screen

Experimentation and experience are the keys to successfully interpreting your Fishfinder screen. We recommend that you take your Fishfinder out on familiar water, and spend time learning to interpret what you see on the Fishfinder 160C screen.

Think of the Fishfinder screen as if you took a picture from the side of an aquarium in your home. You can see how deep a fish is in the water (how close it is to the top or bottom), but you cannot tell where the fish is located horizontally in the water (whether it is near the front or the back of the aquarium). Remember this when you are trying to locate exactly where something is in the water.

The strongest sonar returns appear on your screen as the most intense solid red. The weaker returns appear as less intense, less solid colors,with dark blue to black being the weakest.

The bottom of the water is always going to be the strongest signal, and therefore the bottom is the continuous, intense red line running across the bottom of the screen. The Fishfinder 160C includes the latest technology in interpreting bottom signals; it can see through fish, structures, and thermoclines (see page 3). Even so, large schools of fish or dense structures close to the bottom can affect water depth return readings.

Along the top of the screen, you might see a grouping of intense colors. This area is surface clutter, which can be caused by waves or any other sonar interference at the surface of the water. Too much surface clutter can obscure your view of fish. You can turn down the Gain setting to reduce this surface clutter.

Between the bottom and the surface clutter, you may see suspended targets. By default, the targets appear as arches.

> **NOTE:** Suspended target returns might not always appear as perfect arches, due to the speed, fish orientation, or other conditions.

You can turn on the Fish Symbols setting if you want to see suspended targets indicated by fish shapes instead of arches.

Using Dual Beam

A dual beam transducer can transmit a narrow or a wide beam. The water area covered by the transmitted sound waves is determined by the transducer beam width and the water depth. The narrow beam provides crisp detail of what is under your boat, and is very helpful if you are fishing in deeper water where the beam covers more area (for example, at a depth of 30 feet, the narrow beam covers the area of about a 7-foot circle).

Narrow Beam   Wide Beam
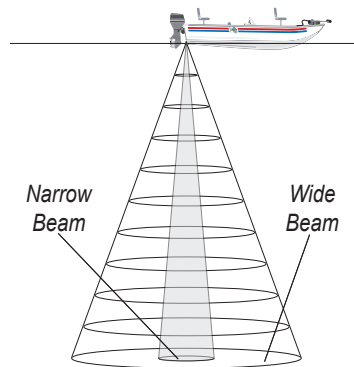
The wide beam is more helpful in shallow water, because it gives you a much wider view of objects in the water, including areas beyond the sides of your boat. At a depth of 30 feet, the wide beam covers the area of approximately a 20-foot circle.

Whiteline

The Fishfinder 160C can help you to determine if the bottom is hard or soft. When the sonar sound waves are reflected back by the bottom, a hard bottom returns a stronger signal than a soft bottom. A thin whiteline indicates a softer bottom while a thick whiteline indicates a harder bottom. Normally, a red line shows the point where water meets the bottom. This line follows the bottom contour, along with any significant objects lying on the bottom. The unit uses the whiteline function to make the bottom layer information easier to distinguish.

With the Fishfinder 160C, active whiteline helps accentuate where strong signals are located, which makes bottom type determination easier. The example below shows the bottom return with and without the whiteline activated.

Whiteline   Hard Bottom   Soft Bottom   *Whiteline Turned Off*
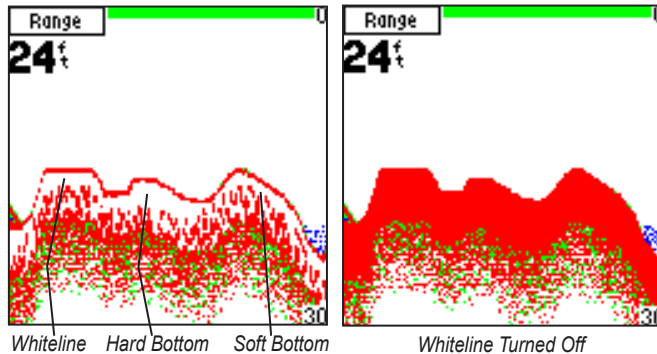
Thermoclines

Garmin's See-Thru technology allows the Fishfinder 160C to "see" through thermoclines and helps locate fish where they live; and fish love thermoclines!

A rough definition of a thermocline is a break in water where the water temperature changes faster than the water above it.

Thermocline
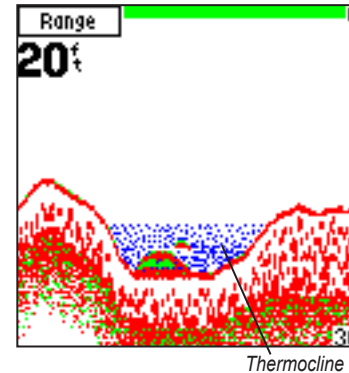
INSTALLING THE FISHFINDER 160C

Read these instructions before attempting installation. Make sure you completely understand these instructions before you begin. When in doubt, seek professional assistance.

Be sure the wiring harness reaches the unit and transducer location before beginning installation. The Garmin Fishfinder 160C hardware allows for installation on either the transom or trolling motor. Check the packing list below. If you are missing any items, contact your Garmin dealer.

Packing List

A–Fishfinder 160C Sonar Unit (1)
B–Swivel Mount Bracket (1)
C–Swivel Base (1)
D–Mounting Knobs- Short, Long (1ea)
E–Mounting Knob Spacer (1)
F–Transducer With Power Cable (1)
G–Transducer Mount (1)
H–Trolling Motor Mount Gasket (1)
I–5 mm Flat Washers (2)
J–4 x 12 mm Screws (4)

K–10-32 Lock Nut (1)
L–5 x 30 mm Screws (2)
M–10-32 x 1.75 Screw (1)
N–1/4" Cable Clamps (2)
O–Plastic Spacer (1)
P–1/4" Rubber Washer (1)
Q–Cable Tie, 5.6" (4)
R–Cable Tie, 20" (1)
S–Power/Data Cable
   (not shown)
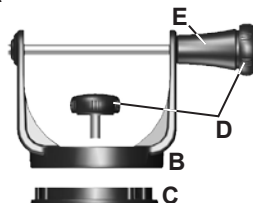
(Cable not shown)
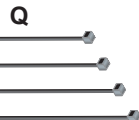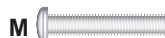
Unit Installation

Choose a location that provides optimal viewing and allows easy access to the unit's keypad. Select a mounting surface strong enough to support the weight of the unit and protect it from excessive vibration or shock. DO NOT mount the bracket in a location where the unit is exposed to extreme temperature conditions. When installing the mounting bracket, be sure to allow room for the connection and routing of the power cable.

Tool List (not included)—drill, screwdriver (Phillips or standard), three #8 pan-head machine bolts with matching nuts and washers, and a 5/32" drill bit, OR three #8 pan head self-tapping screws, and a 1/16" drill bit.

To mount the bracket assembly:
1. Using the swivel base as a template, mark the location of the three mounting holes.
2. If securing the base with machine bolts, drill three 5/32" holes at the locations you marked. If securing the base using self-tapping screws, drill 1/16" starter holes at the locations you marked. Generally, starter holes should be no deeper than half the screw length.
3. Secure the swivel base with three bolts or screws. **DO NOT OVERTIGHTEN**.
4. Attach the swivel bracket and secure it with the short knob.

Mounting Holes

Swivel Base

Short Knob

Swivel Bracket and Base
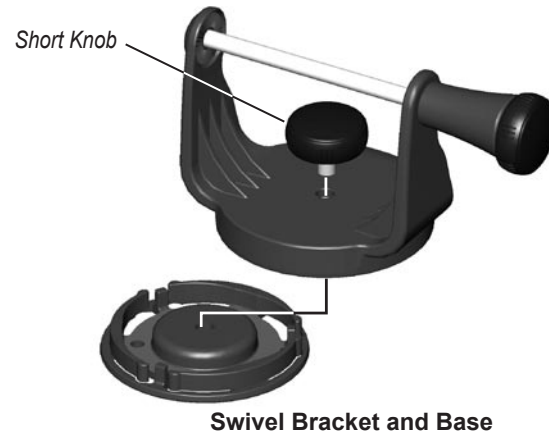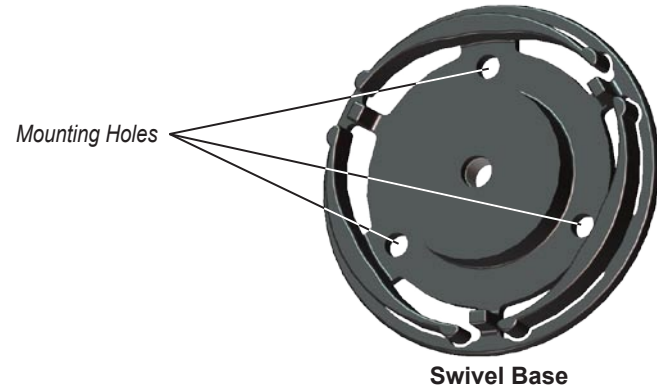
To install the unit on the mounting bracket:

1. Align the slot on the back of the unit with the long mounting knob and slide into place. It may be necessary to adjust the long knob to spread the bracket arms apart. (Turn counter-clockwise to widen the bracket arms, clockwise to tighten.)

2. Adjust the unit angle and tighten the long mounting knob until snug.

3. Tilt the unit by loosening the long knob on the right side of the bracket assembly.

4. Rotate the entire bracket by twisting it left or right. (**NOTE**: You will hear clicks as you turn the bracket.)

5. Tighten all knobs when the viewing angle you want is obtained.

Transducer Installation

Once you've installed the Fishfinder 160C unit, you must install the transducer for it to function. The included transducer can be installed on the transom (see page 7) or on the trolling motor (see page 9).

To assemble the transducer:

1. Insert the rubber washer and plastic spacer in the transducer at the same time. DO NOT lubricate the rubber washer.

2. Route the cable toward the back and slide the transducer into the mounting bracket.

3. Place a 5 mm flat washer on the 10-32 x 1.75" screw and insert the screw through the mounting bracket, spacer, and rubber washer.

4. Place the remaining 5 mm flat washer on the exposed end, and install the 10-32 lock nut finger tight. The transducer is tightened further after installation on the boat.
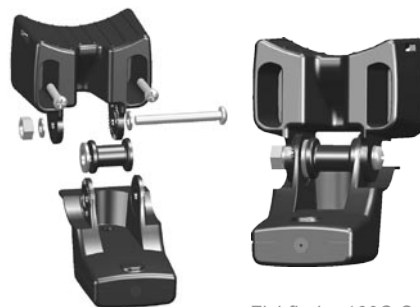
Selecting a Transom Mount Location

For your sonar to operate properly, the transducer has to be located in clean (non-turbulent) water. The transducer should be mounted as near the center of the boat as possible.

DO NOT cut the transducer lead, this will void your warranty and may degrade the sonar's operation.

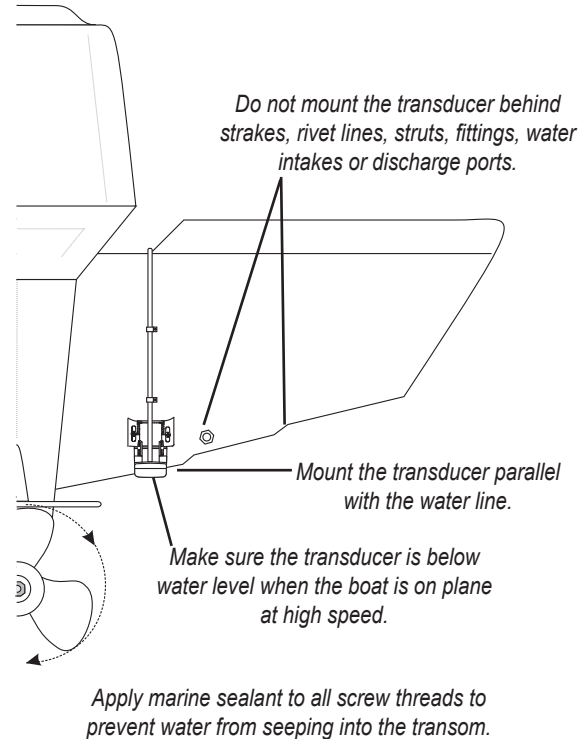DO NOT mount the transducer behind strakes, rivet lines, struts, fittings, water intake, discharge ports, eroding paint, or anything that creates air bubbles or causes the water to become turbulent. It is important that the transducer be as close to the center line as possible in calm, non-turbulent water for optimal performance. Avoid mounting the transducer in locations where the boat may be supported during launching, hauling, trailering, or storage.

Mount the transducer away from the path of the prop on single drive boats. On twin drive boats, mount the transducer between the drives if possible. Do not mount the transducer directly in the path of the prop. The transducer can cause cavitation that may degrade the boat's performance and damage the prop.

Do not mount the transducer behind strakes, rivet lines, struts, fittings, water intakes or discharge ports.

Mount the transducer parallel with the water line.

Make sure the transducer is below water level when the boat is on plane at high speed.

Apply marine sealant to all screw threads to prevent water from seeping into the transom.
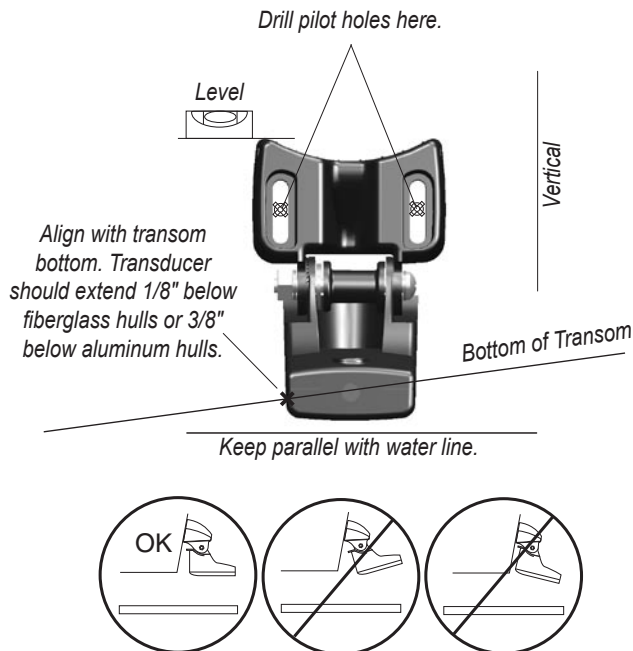
Mounting the Transducer on a Transom

Tool List (not included)—drill, 3/8" wrench or socket, 5/32" and 1/8" drill bits, masking tape, #2 Phillips screwdriver, marine sealant.

To mount the transducer on a transom:

1. Position the transom mount at the selected location, making sure the transducer is parallel with the water line. Mark the center locations of each hole on the transom mount (see figures to the right).

2. Using the 5/32" bit, drill the pilot holes approximately 1" (25 mm) deep at the marked locations. To avoid drilling the holes too deep wrap a piece of tape around the bit 1" from the point of the bit.

3. Apply marine sealant to the 5 x 30 mm screws. Attach the transducer to the transom using the 5 x 30 mm screws. Adjust the transducer to extend beyond the bottom of the transom approximately 1/8" (3 mm) on fiberglass hulls or 3/8" (10 mm) on aluminum hulls. Adjust the transducer to be aligned parallel with the water.

4. Tighten the 10-32 locking nut until it touches the mounting bracket, and then tighten 1/4 turn more (do not overtighten).

NOTE: After you install the transducer on a transom, it is highly recommended you test the installation (see page 10)

Drill pilot holes here.

Level

Vertical

Align with transom bottom. Transducer should extend 1/8" below fiberglass hulls or 3/8" below aluminum hulls.

Bottom of Transom

Keep parallel with water line.

OK

Mounting the Transducer on a Trolling Motor

To mount the transducer on a trolling motor:

1. Slide the large cable tie through the slot on the transducer mount with the ridges of the band facing up until equal lengths extend on both sides of the mount. (**NOTE:** For cold water, or heavy timber or debris areas, a metal 4-5" worm gear clamp is recommended.)

2. Position the mount gasket on the curved top of the transducer mount.

3. Place the transducer assembly against the motor body of the trolling motor, with the front of the transducer pointed away from the trolling motor propeller.

4. Wrap the two ends of the cable tie around the motor body. Place the pointed end of the cable tie through the fastener hole on the opposite end and pull it through until it is snug but not tight. (The cable tie clicks when you pull it.)

5. Position the transducer so that it is parallel with the bottom when in use, and make sure the gasket is aligned properly. Pull the cable tie end until tight. Trim off the excess, if necessary. Tighten the 10-32 locking nut until it touches the mounting bracket and then tighten 1/4 turn more. (Do not overtighten.)

6. Route the 30' (9 m) transducer cable using the supplied cable ties to secure the cable to the motor shaft. You can fill the forward-facing portion (except the cable tie pocket) of the transducer mount with sealant to avoid accumulating debris.

Cable tie

Mounting gasket
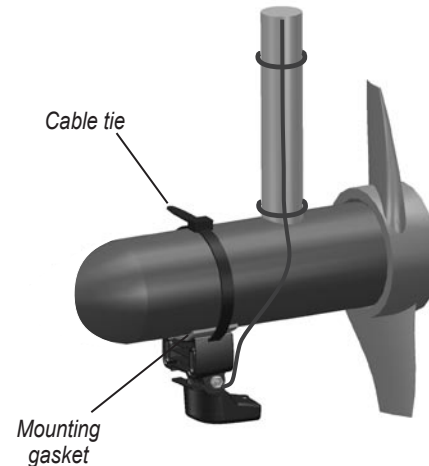
Testing the Transom Mount Installation

Perform this test after you install the Fishfinder. Because you need water to carry the sonar signal, the Fishfinder does not function properly with the transducer out of the water. When you place your boat in the water, check for leaks around the screw holes that are below the water line. DO NOT leave your boat in the water for an extended period of time without checking for leaks.

To test the transom mount installation:

1. Begin testing the installation at a slow speed. If the sonar appears to be working properly, gradually increase the boat's speed observing the sonar's operation. If the sonar signal suddenly is lost or the bottom return is severely degraded, note the speed at which this occurs.

2. Return the boat to the speed at which the signal was lost. Make moderate turns in both directions and see if the signal improves.

3. If the signal strength improves while turning, adjust the transducer so that it extends another 1/8" below the transom of the boat. It might take several adjustments to eliminate the degradation.

4. If the signal does not improve it may be necessary to move the transducer to a different location.

Installing the Wiring Harness

The Fishfinder 160C comes with a wiring harness that connects the unit to power and the transducer with one easy-to-remove connection. If it is necessary to extend the power wires, use 22 AWG wire. DO NOT cut the transducer cable, because this will void your warranty. Transducer extension cables are available from your Garmin Dealer.

If your boat has an electrical system, it may be possible to wire the unit directly to an unused holder on your current fuse block. If you are using the boat's fuse block, remove the in-line fuse supplied with the unit. You can also wire the unit directly to the battery.
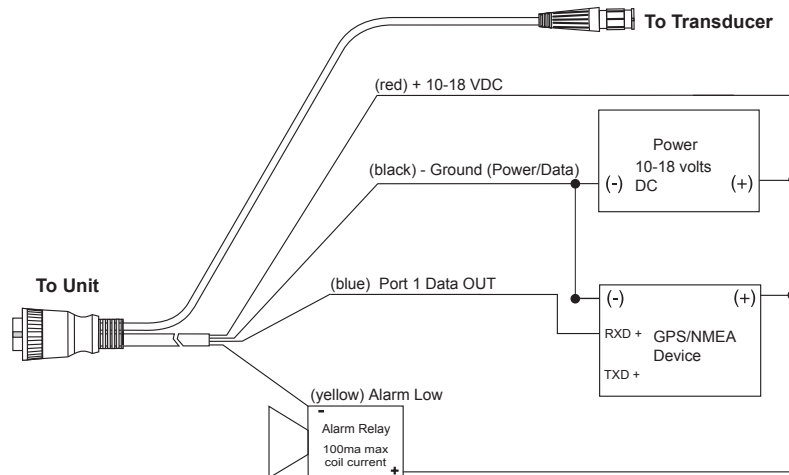
To install the wiring harness:

1. Install the Red (+) wire on the positive battery terminal.

2. Install the Black (-) wire on the negative battery terminal.

3. Install a 2 Amp fuse in the fuse holder (fuse block only).

4. Align the notches on the cable plug and back of the unit. Insert the cable into the connector and turn the lock ring counter-clockwise until it stops.
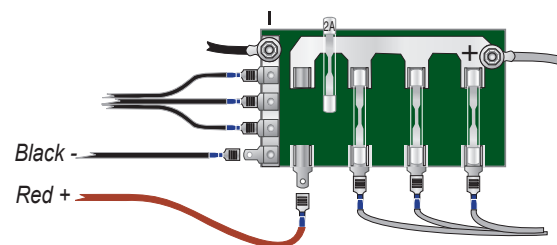
The Fishfinder 160C outputs NMEA data for: Water Depth, Water Speed and Water Temperature.

To connect the NMEA output to a NMEA device:

Connect the Blue wire to the Data Input of the NMEA device.

To Transducer

(red) + 10-18 VDC

(black) - Ground (Power/Data)

To Unit

(blue) Port 1 Data OUT

(yellow) Alarm Low

Power
10-18 volts
(-)   DC   (+)

(-)   (+)

RXD +   GPS/NMEA
         Device
TXD +

Alarm Relay
100ma max
coil current

Wiring Diagram

Black -

Red +

Wiring to a Fuse Block